

CLAIMS:

- 10049676.021502
- 5 1. Method of producing mould parts (5) on a string moulding apparatus comprising a moulding chamber (1) between a squeeze plate (2) and a pivoted squeeze plate (3) in which both the squeeze plate (2) and the pivoted squeeze plate (3) can move in a direction towards each other and a direction away from one another comprising the steps of introducing a compressible particulate moulding material (4) in the moulding chamber (1) and then squeezing the moulding material (4) by
- 10 moving the squeeze plate (2) and the pivoted squeeze plate (3) towards one another,
- characterised by the step of
- controlling the velocity of the squeeze plate and the velocity of the pivoted squeeze plate independent from one another during the squeezing of the mould part (5).
- 15 2. Method according to claim 1, characterised by the step of controlling the velocity of the squeeze plate (2) and the pivoted squeeze plate (3) such that they move in the same direction during at least a part of the squeezing of the mould.
- 20 3. Method according to claim 2, characterised by the step of controlling the velocity of the squeeze plate (2) and the pivoted squeeze plate (3) such that either the squeeze plate (2) or the pivoted squeeze plate (3) is slowed down abruptly for creating a shock effect.
- 25 4. Method according to claim 2 or 3, characterised by the step of controlling the velocity of the squeeze plate (2) and the pivoted squeeze plate (3) such that the pivoted squeeze plate (3) is reversed during the squeezing operation.
- 30 5. Method according to any of claims 2 to 4, characterised by the step of controlling the velocity of the squeeze plate (2) and the pivoted squeeze plate (3) such that they move towards one another with different velocity during at least a part of the squeezing of the mould
6. Method according to any of claims 1 to 5, characterised by the step of controlling

the velocity of the squeeze plate (2) and the pivoted squeeze plate (3) such that they move towards one another with equal velocity during at least a part of the squeezing of the mould

5 7. Method according to any of claims 1 to 6 characterised in that the velocity of the squeeze plate (2) and the velocity of the pivoted squeeze plate (3) are controlled according to a predetermined velocity versus time profile.

10 8. Method according to any of claims 1 to 7, characterised in that the velocity of the pivoted squeeze plate (3) is controlled such that the pivoted squeeze plate (3) is positioned at the moulding chamber front 1a at the end of the squeezing of the mould.

15 9. String moulding apparatus for producing mould parts (5) comprising a moulding chamber (1) between a squeeze plate (2) and a pivoted squeeze plate (3), in which mould parts (5) are produced by introducing a compressible particulate moulding material (4) in the moulding chamber (1) and then moving the squeeze plate (2) and the pivoted squeeze plate (3) towards each other to squeeze the mould part (5) characterised in that the velocity of the squeeze plate (2) and the velocity of the
20 pivoted squeeze plate (3) are controlled independently from one another during squeezing of the mould part (5).

25 10. Apparatus according to claim 9, characterised in that the actuator 10 driving the squeeze plate 2 and the actuator 11 driving the pivoted squeeze plate 3 are independently powered.

30 11. Apparatus according to claim 9 or 10, characterised in that a first hydraulic actuator 10 driving the squeeze plate 2 is powered by a first pump 30 and a second hydraulic actuator 11 driving pivoted squeeze plate 3 is powered by a second pump 31.

12. Apparatus according to any of claims 9 to 11, characterised by comprising a sensor 62 for producing a signal corresponding to the velocity of the squeeze plate 2 and comprising a sensor 62' for producing a signal corresponding to the velocity

of the pivoted squeeze plate 3.

13. Apparatus according to claim 12, characterised by comprising a controller 60 which receives the signals from the sensors 62 and 62' and controls the velocity of the squeeze plate 2 and the pivoted squeeze plate 3 in response to these signals.

14. Apparatus according to claim 12, characterised in a number of operator selectable or automatically selectable predetermined velocity versus time profiles for the squeeze plate 2 and the pivoted squeeze plate 3 are stored in the controller 60.

15. Apparatus according to any of claims 12 to 13, characterised in that the controller 60 controls the speed of the squeeze plate and the pivoted squeeze plate during the squeezing of the mould according to the speed versus time profiles stored in the controller.

16. Apparatus according to any of claims 11 to 14, characterised in that the pump 30 and the pump 31 are of the variable displacement type, whereby the displacement of the pump 30 and the pump 31 is set according to a respective signal from the controller 60.

17. Apparatus according to any of claims 12 to 15, characterised in that the controller 60, the sensor 62, the pump 30 and the actuator 10 form a closed loop PID control system.

18. Apparatus according to any of claims 12 to 16, characterised in that the controller 60, the sensor 62', the pump 31 and the actuator 11 form a closed loop PID control system.

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